

*the*  
8. (Amended) Method according to [one of the preceding claims] claim 1, characterised in that said step consisting in running an updated estimation of the coefficients of the impulse response  $\hat{H}_{(z)}^{(l+1)}$  for the next iteration consists in:

- subjecting said sequence of weighted outputs on decoded bits to an interleaving process;
  - subjecting said flow of *the* sequence of re-interleaved weighted outputs to a hard decision in order to reconstitute the symbols received;
  - subjecting the reconstituted received symbols to a linear pseudo-inversion process on all the reconstituted received symbols.
- A1*

*the*  
9. (Amended) Method according to [one of claims 1 or 2,] claim 1, characterised in that said step consisting in running an updated estimation of the coefficients of the impulse response of the transmission channel for the next iteration consists in applying an *EM* iteration using the weighted outputs on symbol bits produced by equalization in the running iteration and the running estimated value of the coefficients of the impulse response of the transmission channel  $\hat{H}_{(z)}^{(l)}$  *D*

Claim 12, line 1, please delete "or 11".

*A*  
13. (Amended) System according to [claims 10 and 12] claim 12, characterised in that:

- said equalization means (1) are MLSE equalization means with soft inputs/outputs;
  - said decoding means (3) are BCJR decoding means with soft inputs/outputs.
- as  
cont  
Bm*

14. (Amended) ~~X~~ System according to [claims 10 and 12] claim 12, characterised in that:

- said equalization means (1) are DDFSE equalization means with soft inputs/outputs;
- said decoding means (3) are BCJR decoding means with soft inputs/outputs.

15. (Amended) ~~X~~ System according to [claims 10 and 12] claim 12, characterised in that:

- Bf
- said equalization means (1) are GSOVA equalization means;
  - said decoding means (3) are BCJR decoding means with soft outputs.

16. (Amended) ~~X~~ System according to claim [10 and one of claims 14 or 15] 14, characterised in that said updated iterative estimation means (4) comprise:

- Ad  
Cof
- means (41) for re-interleaving the sequence ( $S_2$ ) of weighted outputs on decoded bits resulting from the decoding process, emitting a sequence of weighted outputs on re-interleaved decoded bits;
  - hard decision means (42) receiving the sequence of weighted outputs on re-interleaved decoded bits and emitting a sequence of reconstituted received symbol bits;
  - means (43) for applying a linear pseudo-inversion on all the reconstituted received symbols, enabling an updated estimation of the coefficients of the impulse response of the transmission channel to be emitted.